Progress on the light ion guide project

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The Light Ion Guide (LIG) group continued to work on improving the LIG's overall efficiency. For the 2.4 m long sextupole consisting of 5 sections a short, about 10 cm long movable section/Si-detector has been installed before the fifth sextupole section which finally guides the ions into the ECR charge breeder. The position of the mobile detector can be adjusted remotely (photo in Fig.1.).

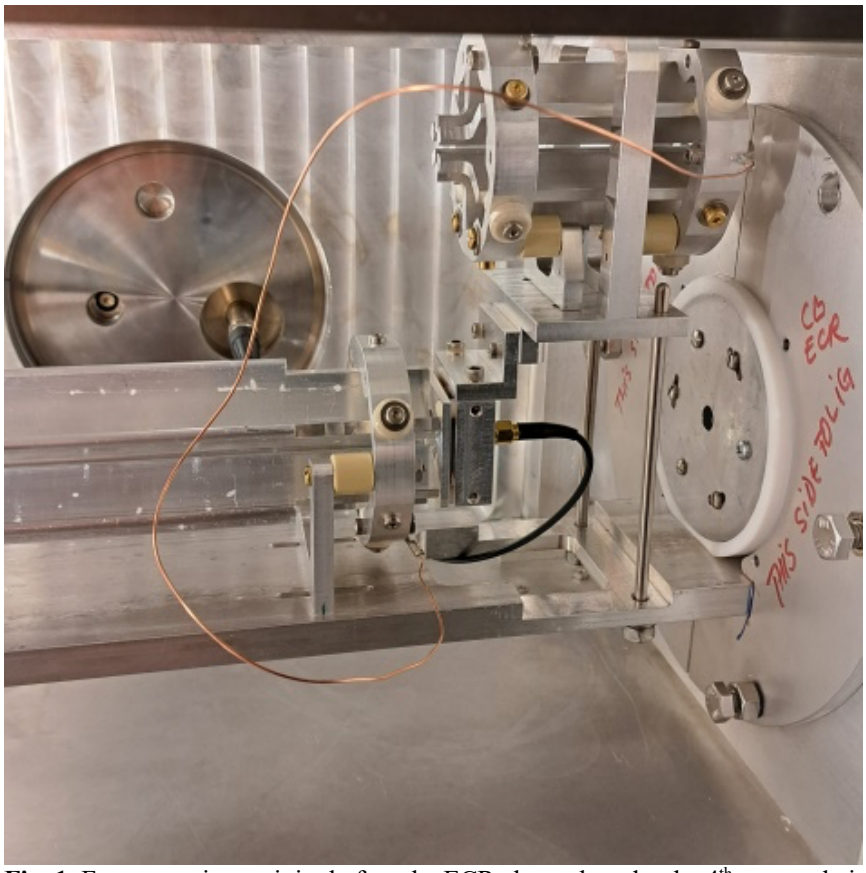

Fig. 1. For measuring activity before the ECR charge breeder the 4th sextupole is raised up and the detector is in collecting position.

This movable detector made transport of radioactive species more consistent. We focused especially to improve our ability to create desired highly charged ions, the main goal being presently a good production of 89Nb for the reacceleration.

The latest result with the charge breeding of $^{89}Nb^{17+}$ is shown in Fig. 2.

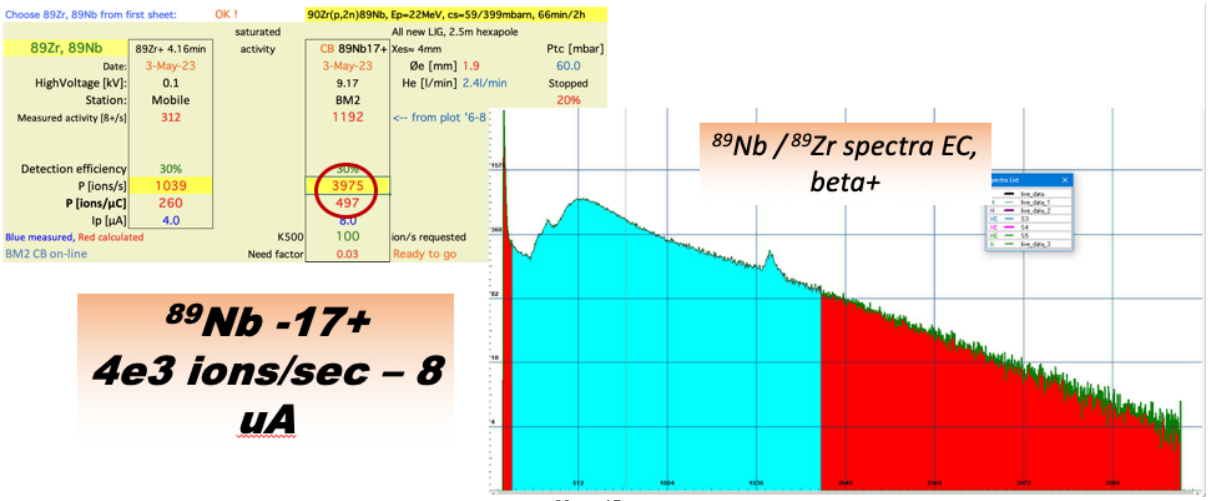

Fig. 2. The latest result with the charge breeding of $^{89}Nb^{17+}$

With the proton beam intensity of 8 μA the charge bred yield of $^{89}Nb^{17+}$, over 4000 ions/s is 40 times more than the minimum yield requested for the K500.